

## Brief Profile

Name	: Dr. Vandna Rathor
Date of Birth	: 10/10/1978
Educational Qualification	
• <i>Ph.D.</i>	: Mathematics (Awarded)
• <i>M. Sc.</i>	: (Mathematics-Operations Research specialization)(2000)
• <i>B.Sc</i>	: Mathematics, Statistics, and Physics (1998)
Work Experience	
• <i>Teaching</i>	: 21
• <i>Research / Industry</i>	:
E-mail ID	: vandna.rathor@miet.ac.in
Contact No.	: 8449796118
Area of Interest	: Cosmology, Operations Research, Differential Equation
Teaching	
• <i>Subjects Taught at UG Level</i>	: <ul style="list-style-type: none"><li>• Math III , Math IV</li><li>• Eng. Mathematics I, II, III.</li><li>• Discrete Mathematics.</li><li>• Applied linear algebra.</li><li>• Introduction to Soft Computing.</li><li>• Elementary Mathematics I,II,</li><li>• Statistical Techniques.</li><li>• Operational Research.</li><li>• Computational Based Numerical Analysis and Statistical Techniques.</li><li>• Business Statistics.</li><li>• Graph theory.</li><li>• Basics of System Modeling and Simulation</li></ul>
• <i>Subjects Taught at PG Level</i>	: <ul style="list-style-type: none"><li>• Quantitative Techniques for Engineers (MBA)</li></ul>
• <i>Computer skills</i>	: <ul style="list-style-type: none"><li>• MAPLE</li><li>• MATLAB</li><li>• LATEX</li><li>• Fundamental of Computers</li><li>• Operating System: DOS 6.22, WINDOWS 98, 2000, MS Office 2000</li><li>• Business Data Processing: Lotus 1-2-3, MS Excel</li><li>• DBMS: D Base III, FoxPro 2.5, 2.6</li><li>• Structure Prog. Business: C, C++, COBOL</li><li>• Computer Networking Numerical Analysis Using C</li></ul>

## Achievements:

1. Won a **Best paper** award in International Conference on Science, Technology and Management (ICSTM-2021) (July 31- Aug 1, **2021**) organized by FIRMS (Forum of Interdisciplinary Research in Mathematical Sciences, Jaipur, India.

2. Reviewer of “*Astrophysics and Space Science*”, Springer peer reviewed Journal.
3. Reviewer of “Open Physics journal”, Springer peer reviewed Journal.
4. **NPTEL –Elite (Silver) Certification** with 75% (Engineering Mathematics I) for 12 week course from 31 Jan. to 27 April 2019 conducted by *Indian Institute of Technology, Kharagpur*.
5. **NPTEL –Elite Certification** with 70% (Numerical Methods) for 8 week course from Sep. to Nov. 2020 conducted by *Indian Institute of Technology, Roorkee*.
6. Won a **Best paper** award in XXXI Annual ORSI convention and *International conference* on O.R and Industry (Dec 19-21, **1998**) held at I.B.S Khandari, Agra.
7. M.Sc. **Gold Medalist**.
8. Certification of Highest Composite Performance Index 48.5 out of 50 in year 2007.

#### Research Guidance

•*M. Phil* :

•*Ph.D.* :

#### Research Publications

•*Journals* : **4 SCI Journals**

•*Conferences* :

•*Book Chapters* :

Patent/IPR :

(*Books Published etc.*)

No. of National/International Conferences attended/ Paper Presented : **14**

No. of Conferences Organized : **1**

STC/FDP/Seminars/Workshops Organized : **2**

STC/FDP/Summer/Winter Schools/Workshops /Seminars attended : **39**

Certification Courses (NPTEL etc.) : **2**

Memberships of the Professional Societies : **2**

Awards/Honors : **2**

Funded Project :

Name of Project	Funding Agency	Duration

Any other relevant Information :		

## LIST OF PUBLICATIONS

### ***Paper Published:***

1. Paper titled ***“Statefinder hierarchy for Tsallis holographic dark energy”*** published in New Astronomy, volume 78, July 2020 , 101380 (accepted on 26 Feb 2020) Impact Factor: 1.162
2. Paper titled ***“Tsallis holographic dark energy with hybrid expansion law”*** published in International Journal of Geometric Methods in Modern Physics , (accepted on 24 June 2020) (World Scientific Publishing Company).Impact Factor: 1.287
3. Paper titled ***“Tsallis HDE with an IR cutoff as Ricci horizon in a flat FLRW Universe”*** published in New Astronomy, Volume 84, 101519 on 4 August 2020 (Elsevier), Impact Factor: 1.162.
4. Paper titled ***“Reconstructing Tsallis holographic quintessence”*** Accepted in Mod. Phys. Lett. A (MPLA) on September 23, 2021 manuscript number: MPLA-D-21-00072.

### ***International Conference:***

1. Presented paper on ***“Reconstructing Tsallis holographic quintessence”*** in **27th International Conference** of International Academy Of Physical Sciences (Coniaps XXVII) on Advances in Relativity and Cosmology (PARC-2021) (October 26-28, 2021) organized by Department of Mathematics, BITS-Pilani, Hyderabad Campus, India.
2. Presented paper on ***“Tsallis holographic dark energy with hybrid expansion law”*** in **International Conference** on Science, Technology and Management (ICSTM-2021) (July 31- Aug 1, 2021) organized by FIRMS(Forum of Interdisciplinary Research in Mathematical Sciences, Jaipur, India.
3. Presented paper on ***“Statefinder hierarchy for Tsallis holographic dark energy”*** in **1<sup>st</sup> Virtual International Conference** on Recent Trends of Teaching and Research in Applied Sciences & Engineering (ICASE 2020) (Dec., 22-23, 2020) organized by Department of Applied Science and Humanities, R. B. S. Engineering Technical Campus, Bichpuri, Agra.
4. Presented paper on ***“Tsallis HDE with an IR cutoff as Ricci horizon in a flat FLRW Universe”*** in **International Conference** on Advancement in Interdisciplinary Research (July 24-26, 2020) organized by Forum for Interdisciplinary Research in Mathematical Sciences BM, Jaipur , Rajasthan University, Rajasthan .
5. Presented paper on ***“Bulk Viscous String Cosmology with Zero-Mass Scalar \_Fields in Kantowski-Sacks Space-Time”*** in **International Conference** on Gravitation, Cosmology and Mathematical Physics in collaboration of Tensor society (ICGCAMP-19) (April 4-7 2019), organized by Department of Mathematics and Physics, GLA University, Mathura.
6. Presented paper on ***“Transit Bianchi type-I Universe in scalar- Tensor theory of Gravitation”*** in **International Conference** on Importance of inter- disciplinary Research in Sciences, Engineering, Management, Humanities, Education & Medical Sciences.” (Feb 27 2018) held in J.S University, Shikohabad (Firozabad) U.P.
7. Organized and participated in ***“International conference on Nanomaterials,”*** (Dec 14,15,16 2016) held in Hindustan College of Science and Technology, Farah , Mathura
8. Presented paper on ***“Optimal N Policy for single server Markovian Queue with Breakdown Repair and state dependent arrival rate”*** in XXXI Annual ORSI convention and **International conference** on OR and Industry (Dec 19-21, 1998) and was awarded as a **Best paper** held at I.B.S Khandari Agra.
9. Presented paper on ***“Optimal Control Policy with Finite arrivals to reduce congestion in Service Systems”*** in Thirteenth Annual Conference & First **International Conference** of Gwalior Academy of Mathematical Sciences (GAMS) with Symposium on Mathematical Modeling in Engineering and Biosciences (Jan 10-13, 2008) held in A.E.C Agra.

### ***National\_Conference:***

10. Participated in National e-Conference on ***“Recent Advances for Innovative Research in Mathematics”*** NCRAIRM-21 (Sep 28, **2021**) organised by Department of Mathematics & IQAC, Indira Gandhi Kala Mahavidyalaya, Ralegaon, Dist. Yavatmal in Collaboration with Department of Mathematics & IQAC, R. A. Arts, Shri. M. K. Commerce & Shri. S. R. Rath Science College, Washim, Dist. Washim.
11. Presented paper on ***“The Quantum Entanglement between Expanding and Contracting Universe”*** in Conference on Mathematical Sciences and Development (Dec 22-24 **2018**) held in I.B.S Khandari, Dr BRA University, Agra.
12. Presented paper on ***“An Optimal EOQ Model With Nonlinear Demand Instantaneous Supply Without Shortage”*** in National Workshop on Applications of Mathematics in Modern Era & Mathematics Day Celebration (Dec 21-22 **2016**) held in I.B.S Khandari Agra.
13. Organized and participated in NCSCAAN- National Conference/ workshop on ***“Synthesis, Characterization and Application of Advanced Nanomaterials”*** (Jan 17-19 **2014**) held in Hindustan college of Science and Technology, Farah, Mathura.
14. Presented paper on ***“Flexible Manufacturing Cell With Common Cause Failure And Unreliable System”*** in National Conference on Mathematical & Computational Modeling, MCM- 2013 (May 24-26 **2013**) held in I.B.S Khandari Agra.
15. Presented paper on ***“Applications of Differential Equations in Real World”*** in Workshop on **Orientation of Eng. Mathematics** (August **2007**) held in A.E.C Agra.

### ***Workshops, FDPs and STC:***

1. Attend Online [Webinar](#) on ***“Optimization of Green Supply Chain Management”*** (Oct. 1, **2021**) organized by Department of Engineering Sciences, Amrutvahini College of Engineering, Sangamner, affiliated to Savitribai Phule Pune University.
2. Attend Online [International Webinar](#) On ***“Neoteric Development of Cosmology and Gravitational Theories”*** (Sep. 29, **2021**) organized by Department of Mathematics and IQAC, Mungsaji Maharaj Mahavidyalaya, Darwha Dist. Yawatmal (M.S) affiliated to Sant Gadge Baba Amravati University, Amravati in Collaboration with Department of Mathematics, Government College of Engineering, Nagpur.
3. Attend Online [International Webinar](#) on ***“Introduction to MATLAB”*** (Sep. 17, **2021**) organized by the Department of Mathematics, JSSATE Noida.
4. Participated in the Online [National Quiz](#) on ***“Virtualization”*** (Sep. 11, **2021**) organised by Department of Computer Science & Information Technology, Arka Jain University, Jamshedpur, Jharkhand.
5. Attend online [webinar](#) on ***“Next Gen Defence Technologies-2021”*** (August 19-20, **2021**) organized by University School of Information and Communication Technology and University School of Engineering, Gautam Buddha University, Greater Noida, U.P. in collaboration with our knowledge partners DRDO. Centre for Knowledge Sovereignty, Srijan Sanchar, Swadeshi Science Movement Vigyan Bharti and ULBHA.
6. Attend [webinar](#) for Young Researchers in ***“Metallurgical & Materials Science”*** (Aug. 12-14, 2020) organized by CSIR - National Metallurgical Laboratory, Jamshedpur.
7. Attend five days E-[Workshop](#) on ***“Stochastic Modelling, Optimization and Soft Computing” (SMOSC-2020)*** (Aug., 10-14, 2020) organized by Department of Mathematics & Statistics, School of Basic Sciences, Manipal University Jaipur.
8. Attend Online [Webinar](#) on ***“Principles of Research writing and scholarly communications”*** (29 July **2020**) organized by AuthorCafe with GLA University, Mathura.
9. Attend Online one week National [Level Workshop](#) on ***“LaTeX”*** (27 July -1 Aug., **2020**) organized by Applied Science and Humanities Department, Sardar Vallabhbhai Patel Institute of Technology, Vasad.
10. Attend Online [Faculty Development Programme](#) on ***“Data Analysis Using Excel”*** (July 20-24, **2021**) organized by MeitY & IIT Kanpur, E & ICT Academy, IIT Kanpur.
11. Participated in National Level [E-quiz](#) on ***“Advanced Graph Theory”*** (July, 13, 2020) organized by PG and Research Department of Mathematics held at SACRED HEART COLLEGE (AUTONOMOUS) Tirupattur, Taminadu, India (Affiliated to Thiruvalluvar University, Vellore).
12. Participated in 3-days International [FDP](#) on ***“Computational Mathematics for Engineers and Researchers”*** (July, 10-12 2020) organized by Department of Mathematics, held at Poornima Institute of Engineering & Technology, Jaipur,

13. Attend Online [Faculty Development Programme](#) on ***“Mathematical Modeling And Its Applications In Engineering”*** (July 6-10, **2020**) organized by AKTU, Department of Applied Sciences and Humanities, Institute of Engineering & Technology, Lucknow.
14. Qualified an ***“E-Quiz on Logical Reasoning”*** (July 22-23, **2020**) organized by Department of Applied Science, Poornima Institute of Engineering & Technology, Jaipur held from with score of 100%.
15. Attended Online [Faculty Development Programme](#) on ***“Mathematical Modeling In Biomedical Engineering - 2020”*** (June 18-20, **2020**) organized by Department of Science and Humanities, Dr. N. G.P Institute of Technology, Coimbatore.
16. Participated in International Mathematics [Webinar](#) on ***“Importance & Applications of Mathematics in Engineering”*** (June 14, 2020) organized by the Department of Mathematics, BBNITM, Lucknow.
17. Attended [Lecture](#) on ***“CO-PO Attainment Computation and Outcomes Analysis”*** (June 13, **2020**) organized by InPods Ed-tech.
18. Participated in One day Online [webinar](#) on ***“Similarity Measure in Fuzzy Numbers and its Applications”*** (June 13, **2020**) organized by Department of Science and Humanities, Dr. N. G.P Institute of Technology, Coimbatore.
19. Participated in National [Webinar](#) on ***“The Universe and Mathematical Modeling”*** (June 11, **2020**) organized by the Department of Applied Mathematics, JSSATE Noida.
20. Participated in online [Faculty Development Program](#) entitled ***“Mathematica”*** (June 9, 2020) organized by the ICFAI University, Jaipur.
21. Qualified an ***“e-Quiz on Engineering Mathematics”*** (June 8, **2020**) organized by Department of Applied Science, Galgotia College of Engineering and Technology, Greater Noida,
22. Qualified online [Quiz](#) on ***“Contribution of Indian Mathematicians to The World”*** (June 6-8, **2020**) organised by Department of Mathematics, JECRC, Jaipur .
23. Participated in a [webinar](#) on ***“Application of Mathematical and Statistical Learning on COVID-19 and its related Problem”*** (June 7, **2020**) conducted by Department of Mathematics and Department of Statistics, Bareilly College, Bareilly.
24. Participated in a [webinar](#) on ***“Mathematics In Everyday Life”*** (June 5, **2020**) organised by Department of Applied Sciences, Ambalika Institute of Management and Technology, Lucknow..
25. Attended AICTE Training And Learning (ATAL) Academy Online [FDP](#) on ***“Artificial Intelligence”*** (April 30 to May **2020**) at College of Technology and Engineering, Udaipur.
26. Attended **IUCAA’s visitor Programme** from Dec. 26, 2019 to Jan. 6 ,2020 and visited ***Inter University Centre for Astronomy and Astrophysics , Pune*** for research work.
27. Attended [Workshop](#) on ***“Advances in Mathematical Sciences and Applications”*** (April 19– 23 2019) organized by Dayalbagh Educational Institute sponsored by TIMC-TEQIP (DEI).
28. Attended [Workshop](#) on ***“General Relativity and Cosmology ”*** (Oct.11-13 **2019**) sponsored by IUCAA Pune and organized by Department of Mathematics , GLA University, Mathura.
29. Attended [Workshop](#) on ***“Advances in Mathematical Sciences and Applications”*** (April 19 – 23 **2019**) organized by Dayalbagh Educational Institute sponsored by TIMC-TEQIP (DEI).
30. Certification of attendance for taking part in a ***“Mendeley Presentation”*** (Sep. 29, 2018) organized by Mendeley Advisor at GLA University, Mathura
31. Attend [Workshop](#) on ***“Guide to Getting Published”*** (Oct. 6, **2018**) organized by Emerald Group Publishing’s at GLA University, Mathura
32. Attended [Short Term Course \(STC\)](#) on ***“Mathematical Modeling and Numerical Simulation of Various Engineering Problems in Transport Phenomena”*** (July 02- 06 **2018**) organized by Department of Mathematics, Indian Institute of Technology, Roorkee.
33. Attended National [Workshop](#) on ***“MATLAB & its Application in Engineering”*** (June 04– 09 **2018**) organized by Department of Electrical & Electronics Engineering sponsored by AKTU, Lucknow(under TEQIP-III).
34. Attended National [Workshop](#) on ***MAPLE (NWM-18)*** (April 13-17 **2018** ) conducted by Department of Mathematics in GLA University, Mathura,
35. Participated in ***“Faculty Development Programme on Enterpreneurship”*** conducted by Institute of Enterpreneurship Development (IEDUP-MSME), sponsored by DST, Govt.of India, New Delhi (Dec 3-12 **2017**) held in Hindustan college of Science and Technology, Farah , Mathura
36. Participated in ***“Faculty Development Programme on Enterpreneurship”*** conducted by Institute of Enterpreneurship Development (IEDUP-MSME), sponsored by DST, Govt.of India, New Delhi (July 31- Aug 13 **2017**) held in Hindustan college of Science and Technology, Farah , Mathura.
37. Participated in ***“National Workshop on Spectroscopic Techniques“*** (Aug 2-4, **2007**) as organizer held in HCST Farah.
38. Participated in ***“National Workshop on Polymer Sciences“*** (Nov12-14, **2005**) as organizer held in HCST Farah.
39. Participated in ***“Workshop in Industrial Mathematics and Computing”*** (April 9-13, **1999**) organized by in the Department mathematics and Computer Science, held at I.B.S Khandari Agra.

**Training:**

1. One month training in **TELCO Jamshedpur (1998)** on “*A Study of Line Balancing of II Assembly Line an analysis & highlight of bottleneck areas*”.
2. One month training in Nice Computers, Khurja.

**Projects undertaken:**

1. “*Library Management*” in C-impact Institute Agra, (affiliated to Dr. B. R. A . Univ. Agra) using **FoxPro 2.6**.
2. “*A Study of Line Balancing of II Assembly Line an analysis & highlight of bottleneck areas*”in TELCO Jamshedpur using **CPM/PERT** Techniques.
3. “*Optimal N Policy for single server Markovian Queue with Breakdown Repair and state dependent arrival rate*” held at I.B.S Khandari using **C Language**.
4. *Applications of Differential Equations in Real World* in A.E.C Agra.
5. *Optimal Control Policy with Finite arrivals to reduce congestion in Service Systems* in A.E.C Agra

**6.** *Flexible manufacturing cell with common cause failure and unreliable system* in I.B.S Khandari, Agra.